

**AMENDMENTS TO THE CLAIMS:**

**Please cancel claims 7-18 without prejudice or disclaimer.**

1. (Currently amended) A circuit comprising:
  - a template comprising first and second layers;
  - a semiconductor material self-assembled ~~self assembled~~ on a side of said first layer of said template; and
  - a self-assembled ~~self assembled~~ connection between the semiconductor material and the second layer of said template ~~to form said circuit~~.
2. (Currently amended) The circuit of claim 1, wherein said circuit comprises:
  - a first metal layer on a substrate;
  - an insulating layer on said first metal layer;
  - a second metal layer on said insulating layer;
  - a self-assembled first semi-conductivity type material on one side of said first metal layer;
  - a self-assembled second semi-conductivity type material on the other side of said first metal layer; and
  - a self-assembled nanowire extending between a field concentrator on said second ~~first~~ metal layer and at least one of said first semi-conductivity type material and said second semi-conductivity type material to form said self-assembled connection.
3. (Original) The circuit of claim 2, wherein said first semi-conductivity type material comprises a p-type material.
4. (Original) The circuit of claim 2, wherein said second semi-conductivity type material comprises an n-type material.
5. (Original) The circuit of claim 2, wherein said self-assembled first semi-conductivity type

material comprises organic molecules on one edge of said gold layer.

6. (Original) The circuit of claim 2, wherein said self-assembled second semi-conductivity type material comprises organic molecules on one edge of said gold layer.

7-18. (Canceled)

19. (New) A circuit comprising:

- a first metal layer formed on a substrate;
- an insulating layer formed on said first metal layer;
- a second metal layer formed on said insulating layer;
- a first self-assembled organic semiconductor material formed on a first side of said first metal layer;
- a second self-assembled organic semiconductor material on a second side of said first metal layer; and
- a self-assembled nanowire formed between said first metal layer and at least one of said first and second self-assembled organic semiconductor materials.

20. (New) The circuit of claim 19, wherein said first and second self-assembled organic semiconductor materials comprise different conductivity types.

21. (New) The circuit of claim 19, wherein said first metal layer comprises one of gold, silver and platinum.

22. (New) The circuit of claim 19, wherein said second metal layer comprises an aluminum layer.

23. (New) The circuit of claim 19, wherein an end of said first and second self-assembled organic semiconductor materials comprises a first termination which bonds to a surface of

said first metal layer.

24. (New) The circuit of claim 19, wherein said first termination comprises a sulfur atom.

25. (New) The circuit of claim 19, wherein said second metal layer comprises a field concentrator, said self-assembled nanowire being formed on said field concentrator.

26. (New) The circuit of claim 19, wherein another end of said first and second self-assembled organic semiconductor materials comprises a second termination, said self-assembled nanowire being bonded to said second termination.

27. (New) The circuit of claim 19, wherein said second termination comprises a sulfur atom.

28. (New) The circuit of claim 19, wherein said nanowire comprises a gold nanowire.

29. (New) A self-assembled structure for electrically connecting layers in a circuit including a first metal layer formed on a substrate, an insulating layer formed on the first metal layer, and a second metal layer formed on the insulating layer, said structure comprising:

    a first self-assembled organic semiconductor material formed on a first side of said first metal layer;

    a second self-assembled organic semiconductor material on a second side of said first metal layer; and

    a self-assembled nanowire formed between said first metal layer and at least one of said first and second self-assembled organic semiconductor materials.